RABIES, ANIMAL

Clinical Features: In animals, the disease has three phases. The first phase (prodromal) often presents as gastrointestinal symptoms (diarrhea, vomiting, etc.), progressing to furious then dumb (paralytic) rabies. During furious rabies, animals may become very aggressive and may roam, biting humans and other animals. In dumb rabies, paralysis is the predominant manifestation of the disease. This often begins with paralysis of the jaw accompanied by excessive salivation because of an inability to swallow. Owners may think the animal has a foreign body stuck in its throat and expose themselves while attempting to remove the "foreign object".

Causative Agent: Lyssavirus

Mode of Transmission: Wild mammals are the most important source of infection for both humans and animals in the United States. Skunks are the main reservoir for rabies in Kansas. Transmission may occur through bites and non-bite exposures. Bite exposures are most common - if the skin is broken during the bite, virus particles may reach a nerve and cause infection. A non-bite exposure occurs if an open wound, scratch, abrasion, or mucous membrane is contaminated with saliva, brain material, or cerebrospinal fluid from a rabid animal; a scratch from a rabid animal is also considered a non-bite exposure.

Incubation Period: The incubation period in animals varies by species.

Period of Communicability: In dogs, cats, and ferrets, rabies is communicable 3-7 days before the onset of clinical signs, and throughout the illness until death. The period of communicability in other species is unknown.

Public Health Significance: A dog, cat, or ferret inflicting a bite may be observed daily for 10 days (if a human was exposed) or quarantined for 6 months (if another animal was exposed) following the exposure to rule out the risk of rabies transmission. If the animal develops signs of rabies or dies during the observation or quarantine period, or if the animal is considered wildlife or an exotic species, it must be humanely euthanized and tested for rabies. As rabies is fatal, those who have been bitten by a rabid animal should receive PEP as soon as possible - PEP consists of one dose of Human Rabies Immune Globulin (HRIG) and doses of rabies vaccine on days 0, 3, 7, 14, and 28.

Reportable Disease in Kansas Since: 1982

Laboratory Criteria for Surveillance Purposes

- Positive direct fluorescent antibody test (preferably performed on central nervous system tissue), ***OR***
- Isolation of rabies virus in cell culture or in a laboratory animal

Surveillance Case Definitions

- *Confirmed:* a case that is laboratory confirmed.

Epidemiology and Trends

2005 Kansas Count: 80*

In Kansas, 80 laboratory confirmed cases of rabies in animals were reported during 2005, a decrease from the 99 cases reported in 2004. The three-year mean for 2002-2004 was 153 cases. Confirmed cases per year may not represent an actual change in rabies prevalence, but rather a change in the number of animal-to-animal or animal-to-human exposures. In Kansas, animals are not usually tested unless an exposure has occurred. In 2005, 6.6% of all animal submissions tested positive for rabies; the five-year median for 2000-2004 was 8.1%. The number of animals submitted for testing and the number of rabies-positive animals tend to follow the cyclical pattern of the skunk population in the state.

Skunks were the most common animals to test positive (Table 1). The state's predominant strain, the "south central skunk" strain, was found in nearly all of the terrestrial animals tested in Kansas in 2005. The "raccoon strain" seen on the East Coast of the U.S. has not been identified in Kansas.

Table 1 - Positive animal rabies species, Kansas, 2005

	Species	*Number Tested*	*Number Positive*	*Percent Positive*
Domestic	Cat	401	6	1.5
	Dog	327	4	1.2
Wildlife	Bat	151	4	2.6
	Fox	2	2	100.0
	Skunk	92	56	60.9
Livestock	Cow	52	5	9.6
	Horse	28	3	10.7

As in previous years, more cats tested positive than dogs. The state regulations on rabies, K.A.R. 28-1-2, do not mandate rabies vaccination for any domestic animal, though several local jurisdictions require vaccinations of some domestic animals, usually dogs.

* Animal rabies data is maintained by the Kansas State University College of Veterinary Medicine's Rabies Laboratory. See http://www.vet.ksu.edu/depts/rabies/

There were no human rabies cases in Kansas in 2005; the last human rabies case in Kansas was reported in 1968. Bats have been associated with most of the human cases in the U.S. Four of the 151 submitted bats tested positive for rabies in Kansas in 2004—all of the positive bats were Big Brown bats, *Eptesicus fuscus*.

Rabies was tested for but not found in the following animals in Kansas during the past 15 years (1991-2005):

Alpaca, Antelope, Baboon, Badger, Beaver, Bison, Chipmunk, Coati, Cougar, Deer, Ferret, Genet, Gerbil, Goat, Gopher, Groundhog, Ground Squirrel, Guinea Pig, Hamster, Hedgehog, Human, Lion, Llama, Mink, Mole, Mouse, Muskrat, Pig, Porcine, Porcupine, Prairie Dog, Primate, Pronghorn, Rabbit, Rat, Ringtail, Squirrel, Tiger, Weasel, Wolf, Woodchuck